

# Work Order ID 50874

July 23, 2009 9:51:18 AM



Page 1

Item ID: D212-664-107

Accept



Setup Start



Revision ID: A

Stop



Item Name: Crosstube Low Standard Fwd

Start Date: 7/28/2009 Start Qty: 1.00



Cust Item ID:

Required Date: 8/7/2009 Req'd Qty: 1.00



Customer:

Reference:

Approvals: Process Plan:

Date:

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop



Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Draw  
Number

Draw  
Rev.

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

Draw Nbr

Revision Nbr

D212-664-147

Rev A

100

0.00



DOCUMENT CONTROL

DC

Memo

0.00

Document Control

Photocopy bluefile and create labels as per PPP D212-664-107 CHG001

110

0.00



Packaging

Packaging

Memo

0.00

Packaging

120

0.00



BENDING MACHINE - CROSSTUBES

CNC Bend 2

Memo

0.00

CNC Alpha 160 Bender

Bend tube as per Dwg D412-664-243 using CNC bender program 412-af and Folio FT010

(P/D) →



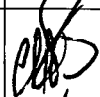


Scrap

MB 09-07-30 X

# Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: DZ12-664-107 PAR #: HA Fault Category: Cross tube NCR: Yes No DQA: HA Date: 09-08-27  
 Resolution: Scrap Disposition: Scrap QA: N/C Closed: HA Date: 09-08-28

NCR: 50874		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
7/8/20	# 110	cross tube was bent with wrong program. operator accidentally erased the wrong program	 09/08/26 PS1042	- Center Section was used with wrong/new program. - L° is 46.6° (see Frisheet)	MB 09-08-27	 09/08/26	 09/08/26 PS1042	 09/08/20
		R.C operator error						 09/08/20

NOTE: Date & initial all entries

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Run Start



Approvals:

Process Plan:

Date:

Tooling:

Date:

Stop



QC:

Date:

SPC (Y/N):

Date:

Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run HoursDraw  
NumberDraw  
Rev.Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

130

QC15- Crosstube Dimensional Check

0.00



QC

Memo

0.00

Quality Control

140

Crosstubes

0.00



Crosstubes

Memo

0.00

Crosstubes

1-Drill Rivet holes as per Dwg D212-664-147 using DT8972. 2-Drill pilot holes in tube as per Dwg D212-664-147 3-Ream hole to finish size in tube as per Dwg D212-664-147 4-Deburr & Inspect for surface damage. Repair damage within limits as per Dwg D212-6

150

Crosstubes Chemical Conversion

0.00



HandFXtube

Memo

0.00

Hand Finishing Crosstubes

**Work Order ID 50874**

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Item ID: D212-664-107

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Cust Item ID:

Required Date: 8/7/2009 Req'd Qty: 1.00



Customer:

Reference:

Run Start



Approvals:

Process Plan:

Date:

Tooling:

Date:

Stop



QC:

Date:

SPC (Y/N):

Date:

Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run HoursDraw  
NumberDraw  
Rev.Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

160

QC3- Inspect Part Finish

0.00



QC

Memo

0.00

Quality Control

170

QC5- Inspect part completeness to step on W/O

0.00



QC

Memo

0.00

Quality Control

180

Outsource process - NDT per QSI038 4.1

0.00



Outsource2

Memo

0.00

Outsource process - NDT

Liquid Penetrant Inspection as per QSI 038Or Issue P/O: \_\_\_\_\_ LPI as  
per ASTM 1417 Level 2 Attach copy of NDT results to work order

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Item ID: D212-664-107

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Start Date: 7/28/2009 Start Qty: 1.00



Cust Item ID:

Required Date: 8/7/2009 Req'd Qty: 1.00



Customer:

Reference:

Run Start



Approvals: Process Plan:

Date:

Tooling:

Date:

Stop



QC:

Date:

SPC (Y/N):

Date:

Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run HoursDraw  
NumberDraw  
Rev.Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

190

0.00



Packaging

Packaging

Memo

0.00

Packaging

Ensure copy of NDT results attached to work order.

200

0.00



QC5- Inspect part completeness to step on W/O

QC

Memo

0.00

Quality Control

Inspect for damage &amp; ensure results are as per Dwg D412-664-203

210

0.00



Crosstubes

Crosstubes

Memo

0.00

Crosstubes

1-Rivet Cuffs as per Dwg D212-664-147. with Sika flex in Between tube &  
Cuff I/A/R SIKAFLEX -241/-291 BATCH: \_\_\_\_\_

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Start Date: 7/28/2009 Start Qty: 1.00



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Required Date: 8/7/2009 Req'd Qty: 1.00



Customer:

Reference:

Run Start



Approvals:

Process Plan:

Date:

Tooling:

Date:

Stop



QC:

Date:

SPC (Y/N):

Date:

Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run HoursDraw  
NumberDraw  
Rev.Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

220

0.00



SprayPaint

SprayPaint

Memo

0.00

Spray Painting

1-Prime inside and outside crosstube as per QSI 005 4.2 2-Paint outside  
crosstube with White Imron as per QSI 005 4.2 PRIME: Start  
Time: \_\_\_\_\_ Finish Time: \_\_\_\_\_ PAINT: Start  
Time: \_\_\_\_\_ Finish Time: \_\_\_\_\_

230

0.00



QC

QC14- Inspect Spray Paint

Memo

0.00

Quality Control

Wrap in plastic bag to protect from scratches

240

0.00



Crosstubes

Crosstubes

Memo

0.00

Crosstubes

1- Assemble as per Dwg D212-664-147: 2- Lightly scuff the bonded area using  
a 320 grit sand paper and clean the area with 41058 wash 'n' wipe: 3- Instal  
support with magnobond 6398 per dwg D212-664-147, cure for 12hrs before  
packaging: Time & date of applic

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Item ID: D212-664-107  
Revision ID: A  
Item Name: Crosstube Low Standard Fwd

Accept



Setup Start



Stop



Start Date: 7/28/2009 Start Qty: 1.00  
Required Date: 8/7/2009 Req'd Qty: 1.00



Cust Item ID:

Customer:

Reference:

Approvals: Process Plan: Date: Tooling: Date:  
QC: Date: SPC (Y/N): Date:

Run Start



Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
250 	QC5- Inspect part completeness to step on W/O	0.00							
QC Quality Control	Memo	0.00							
260 	QC4- 100% Inspect kits for completeness	0.00							
QC Quality Control	Memo	0.00							
270 	Packaging	0.00							
Packaging Packaging	Memo Identify and pack for shipping as per PPP D212.664-107	0.00							

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Item ID: D212-664-107

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Setup Start



Revision ID: A

Stop



Item Name: Crosstube Low Standard Fwd

Start Date: 7/28/2009 Start Qty: 1.00



Cust Item ID:

Required Date: 8/7/2009 Req'd Qty: 1.00



Customer:

Reference:

Run Start



Approvals: Process Plan:

Date:

Tooling:

Date:

Stop



QC:

Date:

SPC (Y/N):

Date:

Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Draw  
Number

Draw  
Rev.

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

280

QC4- 100% Inspect kits for completeness

0.00



QC

Memo

0.00

Quality Control

290

QC21- Final Inspection - Work Order Release

0.00



QC

Memo

0.00

Quality Control



# Picklist Print

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Page 1

Work Order ID: 50874

Parent Item: D212-664-107RevA

Parent Item Name: Crosstube Low Standard Fwd


Comments:

Start Date: 7/28/2009

Required Date: 8/7/2009

Start Qty: 1.00

Required Qty: 1.00



Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
D3428-1RevA		Manufactured	No			100	Each	18.0000	1.0000			
												
Placard												

Warehouse                      Loc Qty                      Loc Code  
Location

Main Warehouse

ST                                      18  
47310                                      8  
48359                                      10

D212-664-107TRNRevA                      Manufactured                      No                      140                      Each                      0.0000                      1.0000

 *B50692* 

Crosstube Turning Detail

D3659-1RevB                      Manufactured                      No                      220                      Each                      8.0000                      2.0000

 *DP9-7-30* 


CUFF

Warehouse                      Loc Qty                      Loc Code  
Location

Main Warehouse

ST                                      8  
37426                                      8

CR3212-4-06                      Purchased                      No                      240                      Each                      346.0000                      44.0000

CHERRY RIVET

Warehouse                      Loc Qty                      Loc Code  
Location

Main Warehouse

ST                                      346  
107534                                      346

# Picklist Print

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Page 2

Work Order ID: 50874

Parent Item: D212-664-107RevA

Parent Item Name: Crosstube Low Standard Fwd


Comments:

Start Date: 7/28/2009

Required Date: 8/7/2009

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
D2893-1RevB		Manufactured	No			240	Each	76.0000	2.0000			
												
2.75 Support												

Warehouse Loc Qty Loc Code

Location

Main Warehouse

ST

76

25657

6

43479

14

46488

18

47109

18

47637

20

D3595-063-450RevA

Manufactured

No

240

Each

55.8000

4.0000



RUBBER CUSHION

Warehouse Loc Qty Loc Code

Location

Main Warehouse

ST

55.8

38959

2

43210

4.8

46465

49

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Shop Packet Print

Page 2

# Picklist Print

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Page 3

Work Order ID: 50874

Parent Item: D212-664-107RevA

Parent Item Name: Crosstube Low Standard Fwd



Comments:

Start Date: 7/28/2009

Required Date: 8/7/2009

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
AN6-35A 		Purchased	No			260	Each	42.0000	4.0000 			
BOLT												

Warehouse                      Loc Qty                      Loc Code  
Location

Main Warehouse  
ST

42

111605

42

AN6-36A                      Purchased

No

260

Each

77.0000

4.0000  


Bolt

Warehouse                      Loc Qty                      Loc Code  
Location

Main Warehouse  
ST

77

109632

1

110382

26

111650

50

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Page 3

# Picklist Print

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Page 4

Work Order ID: 50874

Parent Item: D212-664-107RevA

Parent Item Name: Crosstube Low Standard Fwd

Comments:

Start Date: 7/28/2009

Required Date: 8/7/2009

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
AN960JD616		Purchased	No			260	Each	398.0000	18.0000			



Washer

Warehouse Loc Qty Loc Code

Location

Main Warehouse

ST	398	
107242	3	
107959	6	
109371	8	
110704	23	
111193	18	
111607	340	

MS21042L6

Purchased

No

260

Each

779.0000

6.0000



Nut

Warehouse Loc Qty Loc Code

Location

Main Warehouse

ST	779	
105077	22	
110002	257	
111548	100	
111578	400	

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Shop Packet Print

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# Picklist Print

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Work Order ID: 50874



Parent Item: D212-664-107RevA



Parent Item Name: Crosstube Low Standard Fwd

Start Date: 7/28/2009

Required Date: 8/7/2009

Comments:

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
MS21920-25		Purchased	No			260	Each	164.0000	4.0000			



Clamp(per MIL-DTL-8783C)

## Warehouse

## Loc Qty

## Loc Code

### Location

Main Warehouse

ST

164

107456

2

108111

3

108975

17

109181

48

109644

10

111282

50

111429

25

111883

9

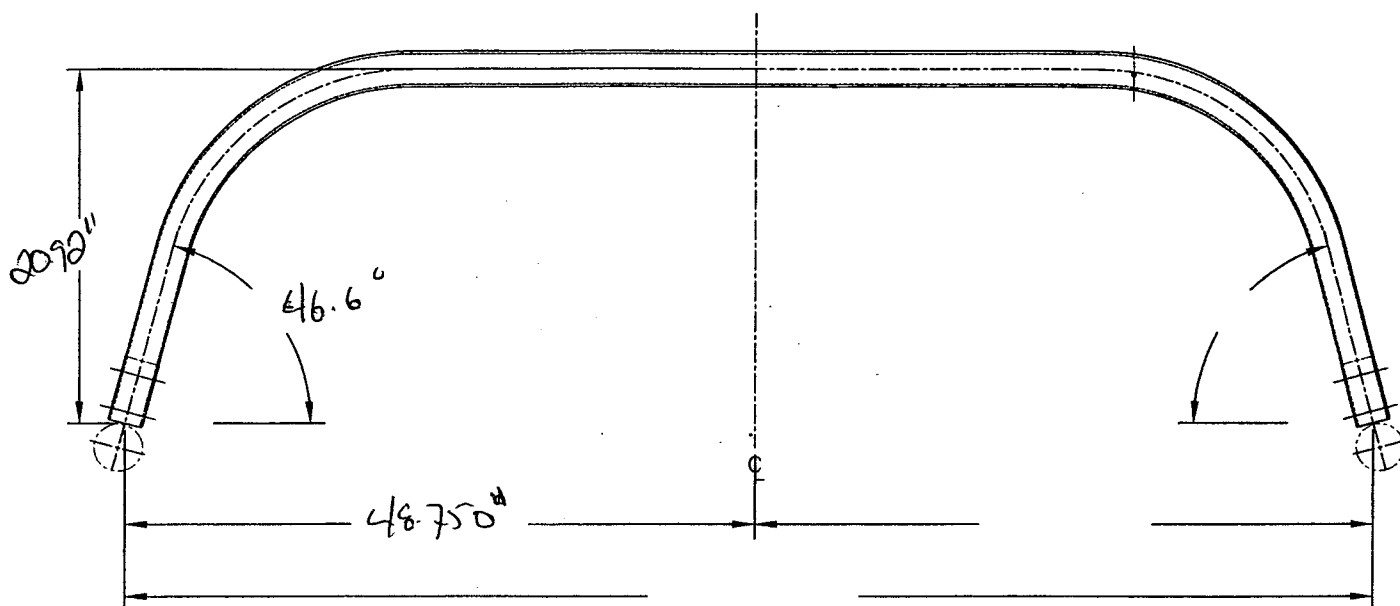
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Shop Packet Print

Page 5

DART AEROSPACE LTD		Work Order:	50874
Description: Crosstube Low Fwd (205/212/412)		Part Number:	D212-664-107
Inspection Dwg: D212-664-147 Rev: A		Page 1 of 1	

Required Dimension	Min	Max
Height	20.79	21.05
1/2 Span	48.55	48.81
Angle	49	52
Total Span	97.1	97.62



Comments

QC15 Inspection	
Date	

Rev	Date	Change	Revised by	Approved
A	08.02.29	New Issue	KJ/JM	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

**PARTS LIST:**

Qty	Part Number	Description
X	D212-664-147	CROSSTUBE ASSEMBLY (205/212/412 LOW FWD)
1	D6019-128	CROSSTUBE
2	D2893-1	SUPPORT
4	D3595-063-450	RUBBER CUSHION
2	D3659-1	CUFF
4	MS21920-25	CLAMP (OR MS21920-26)
44	CR3212-4-06	RIVET (OR M7885/3-4-06)
A/R	MAGNOBOND 6398	ROCKWELL SPECIFICATION R80-120-023 ADHESIVE (TEXTRON/BELL SPEC. 299-947-100, TYPE II, CLASS 2 ADHESIVE)
A/R	SIKAFLEX-241/-291	SEALANT (OR PROSEAL 890 OR MIL-S-8802 CLASS B2 SEALANT)

*W/O*  
*50874*

**GENERAL NOTES:**

- 1) MATERIAL: MANUFACTURED FROM D6019-128  
FINISHED LENGTH = 126.53±0.020 (BEFORE BENDING/TRIMMING)
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1  
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2  
PAINT OUTSIDE PER DART 005 4.2
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- 4) ALL DIMENSIONS ARE IN INCHES
- 5) PART IS SYMMETRIC ABOUT CENTERLINE.
- 6) WHEN MACHINING TAPER, RUN-OFF PART AT STOCK. BLEND OUT EDGE LONGITUDINALLY. TRANSITION SHOULD BE SMOOTH.
- 7) BEND PROGRESSIVELY WITH A MINIMUM OF 8 PASSES. MAXIMUM TUBE FLATTENING DUE TO BENDING IS 6% BASED ON O.D., EXCEPT UP TO 10% IS ALLOWED IN AREA NOTED.
- 8) LIQUID PENETRANT INSPECT OUTSIDE SURFACE OF CROSSTUBE PER QSI 038.
- 9) SCRIBE DART PART NUMBER AND BATCH NUMBER ON INNER SURFACE OF TUBE WITH A VIBRATING STYLUS.
- 10) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- 11) APPLY A 0.03" TO 0.06" THICK LAYER OF MAGNOBOND 6398 TO THE SURFACE OF D2893-1 THAT WILL BE IN CONTACT WITH THE CROSSTUBE. LET CURE FOR 12 HOURS AFTER INSTALLATION AND PRIOR TO PACKAGING.
- 12) INSTALL MS21920-25 CLAMPS (OR -26) WITH D3595-063-450 RUBBER CUSHIONS TO SECURE D2893-1 SUPPORT ON TOP SIDE OF THE CROSSTUBE. ENSURE CLAMPS ARE OPPOSITE CROSSTUBE SUPPORT.
- 13) TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS SHOWING IN SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING.
- 14) INSTALL D3659-1 CUFF AFTER CHEMICAL CONVERSION COAT BUT BEFORE PAINT, WITH A LAYER OF SIKAFLEX-241/-291 OR PROSEAL 890 OR MIL-S-8802 CLASS B2 SEALANT BETWEEN CUFF AND CROSSTUBE. SEAL EDGE OF CUFF TO ENSURE NO GAPS.
- 15) TOUCH-UP HOLES WITH CHEMICAL CONVERSION COAT.

DEO ATTACHED

RELEASED  
07.09.24

A		07.07.07	NEW ISSUE
DESIGN	<i>qp</i>	DRAWN BY	<i>qp</i>
CHECKED		APPROVED	<i>[Signature]</i>
DATE		07.07.07	
COPYRIGHT © 2007 BY DART AEROSPACE LTD.		DART AEROSPACE LTD. HAWKESBURY, ONTARIO, CANADA	
THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.		DRAWING NO. D212-664-147	
		SHEET 1 OF 3	
		SCALE	
		CROSSTUBE (205/212/412 LOW FWD) NTS	



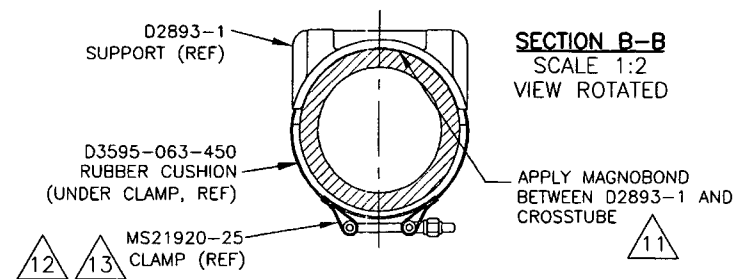
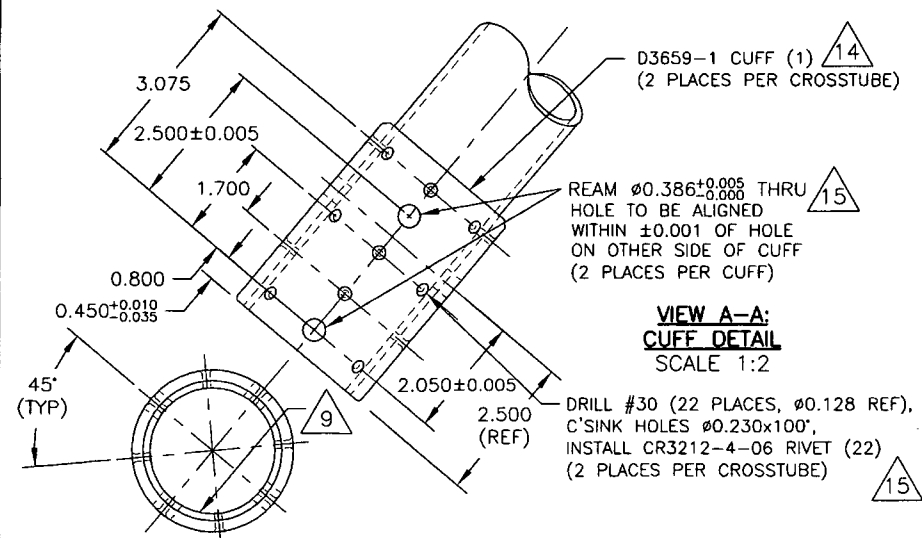
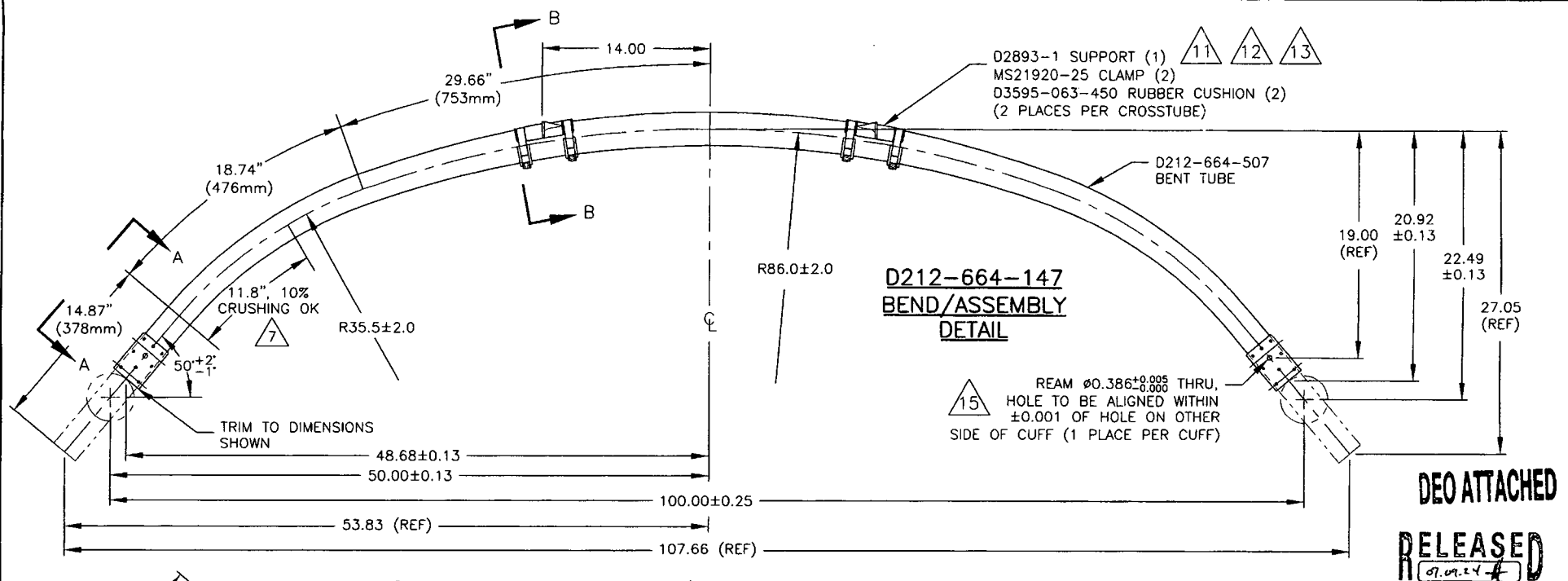
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



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		DATE		D212-664-147	SHEET 2 OF 3
		07.07.07		TITLE	SCALE
				CROSSTUBE (205/212/412 LOW FWD)	1:8

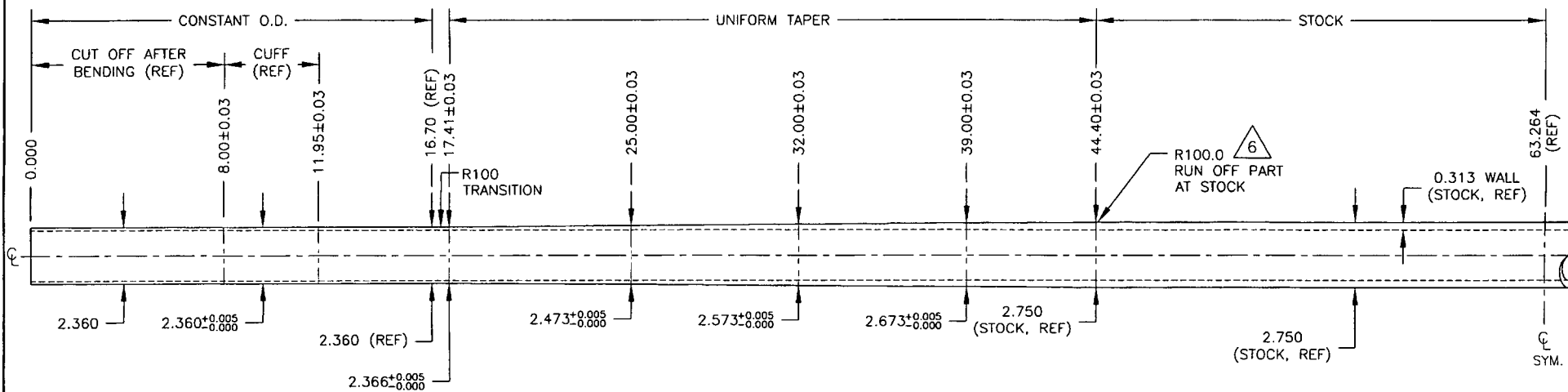
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



D212-664-147 MACHINING DETAIL

RELEASED  
97.09.24

DEO ATTACHED

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THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.		CHECKED ptt	APPROVED ptt	
DATE 07.07.07		TITLE CROSSTUBE (205/212/412 LOW FWD) 1:4		

REV. A  
SHEET 3 OF 3

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

DRAWING NO. D212-664-147	TITLE CROSSTUBE	REV. A	DART AEROSPACE LTD ENGINEERING ORDER		D.E.O. NO. D212-664-147-A-1	SHEET NO. SHEET 1 OF 1	SCALE NTS
DRAWN <i>CD</i>	CHECKED <i>PH</i>	MFG. APPR. <i>E</i>	APPROVED <i>MD</i>		DE APPR. <i>PH</i>		
DATE 09.05.01	DATE 09.06.15	DATE 09.06.15	DATE 09/06/16		DATE 09/06/16		

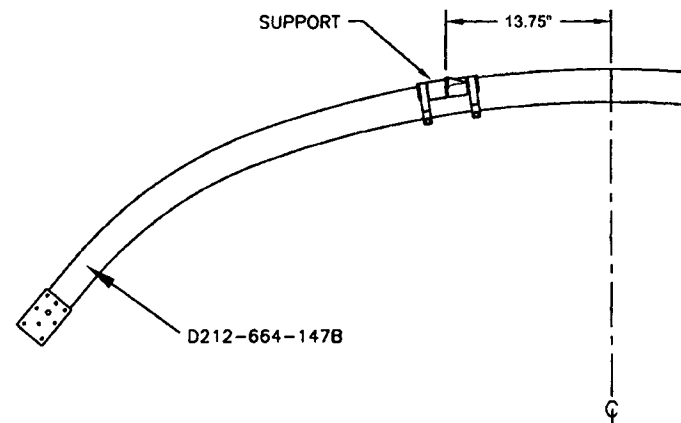
**CHANGE:**

ADD THE FOLLOWING CROSSTUBE ASSEMBLY:

Part Number	Description
D212-664-147B	CROSSTUBE ASSEMBLY (214 LOW FWD)

THE D212-664-147B CROSSTUBE HAS THE SAME PARTS LIST AS THE D212-664-147 CROSSTUBE. HOWEVER, INSTALL THE SUPPORTS AS SHOWN IN FIGURE 1 OF THIS ENGINEERING ORDER. THE NEW KIT IS OTHERWISE ASSEMBLED PER THE D212-664-147 CROSSTUBE.

**RELEASED**  
09/26/22 *MD*



**FIGURE 1 - SUPPORT INSTALLATION**

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Work Order Summary

August 26, 2009 10:57:06 AM

Page 1 of 1

Criteria : Work Order ID: 50874 Item ID: D212-664-107RevA Product Family CROSSTUBES  
 Work Order Start Dates 7/28/09 to 7/28/09 11:59:59 PM Work Order Required Dates 8/07/09 to 8/07/09  
 11:59:59 PM

All References

Work Order Status Complete

Work Order ID 50874 Required Qty 1.0000 Status Code Complete  
 Item ID D212-664-107RevA Accepted Qty 0.0000 Scrap Qty 1.0000  
 Item Name Crosstube Low Standard Fwd  
 Current Acct Value \$1,106.256 Sales Order ID  
 Start Date 7/28/09 Required Date 8/07/09 Completed Date 8/26/09  
 10:56:38 AM

Standard	** Actual **	** Acct. Value **	** Variance **	** Variance % **
<b>Direct Costs</b>	<b>Total</b>	<b>Each</b>	<b>Each</b>	<b>Each</b>
Material	\$0.000	\$0.000	\$1,491.159	100.00%
Labor	\$314.170	\$0.000	\$642.670	100.00%
Outplant	\$0.000	\$0.000	\$0.000	0.00%
Variable Burden	\$0.000	\$0.000	\$0.000	0.00%
Fixed Burden	\$792.086	\$0.000	\$1,450.720	100.00%
Material Burden	\$0.000	\$0.000	\$0.000	0.00%
<b>** Total **</b>	<b>\$1,106.256</b>	<b>\$0.000</b>	<b>\$3,584.549</b>	

Item ID/ Item Name	Required Qty	Issue Code	Issue Date	Issued Qty	Cost Amount
D212-664-107TRNRevA	1.0000				
Crosstube Turning Detail			8/26/09	1.0000	\$736.384
<b>Total Matl Amts:</b>					<b>\$736.384</b>

## Work Center CNC Bend 2

Employee ID	Rout Seq ID	Labor Date	Setup Hours	Actual Setup Hours	Labor Hours	Actual Labor Hours	Nbr of WOs	Setup Amount	Labor Amount	Fix Burd Amount	Var Burd Amount	Total Amounts
BRUN01												
	7/30/09											
120			0.00	0.00	1.75	1.75	1.00	\$0.000	\$28.253	\$74.740	\$0.000	\$102.99
PAQU03												
	7/30/09											
120			0.00	0.00	1.74	1.74	1.00	\$0.000	\$28.177	\$74.539	\$0.000	\$102.71
	7/31/09											
120			0.00	0.00	1.56	1.56	1.00	\$0.000	\$25.210	\$66.690	\$0.000	\$91.90
RAIN01												
	7/31/09											
120			0.00	0.00	1.23	1.23	1.00	\$0.000	\$19.824	\$52.441	\$0.000	\$72.26
<b>Total:</b>			0.00	0.00	6.28	6.28	4.00	\$0.000	\$101.462	\$268.410	\$0.000	\$369.87

August 26, 2009 10:57:06 AM

Work Order Summary

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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries